

REMARKS

Claims 1-38 are all the claims pending in the application.

Claims 1-38 are rejected.

Claims 1-3, 5-7, 9, 10, 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff (U.S. Patent No. 6,067,545) in view of Peterson (U.S. Patent No. 5,699,510).

Claims 4, 8, 11, 12, 13, 14, 15, 17-20, 23-26 and 28-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff (U.S. Patent No. 6,067,545) in view of Peterson (U.S. Patent No. 5,699,510) in further view of Richter (U.S. Patent Publication No. 2002/0107962).

Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff (U.S. Patent No. 6,067,545) in view of Richter (U.S. Patent Publication No. 2002/0107962).

The Applicants traverse the rejections and request reconsideration.

In responding to the Applicants' arguments, in item 5(a) of the outstanding Office Action, the Examiner is believed to be mischaracterizing the Applicants arguments. The applicants respectfully submit that: a) Peterson discloses a mirror system; and, b) a mirror system provides data redundancy. Notwithstanding the Examiners' assertion to the contrary, the Applicants are not arguing that the two mirrors are load-balanced.

The mere fact that two systems may have identical data does not mean that they face the same operational load. A mirroring system as in the cited references does not automatically call for load-balancing between tasks performed on the network resources as is in the present invention. Furthermore, the mirror in the cited references is not a redundant system in the sense

that if one of the mirror system fails the alternate system will go into operation instead of the failed system.

The Applicants respectfully disagree with the Examiner's assertion made in respect of the rejection of claim 1 for at least the following reasons. A redundant resource, contrary to the Examiner's assertions, has nothing to do with the ability to have an alternate path as suggested by Wolff regardless of the ability to map the path based on utilization and path tables. A redundant path is required to be a totally independent path from the path that it provides the redundancy for. Wolff does not provide such a redundancy capability. The aim of Wolff is load balancing between alternate paths that are available. Wolff further provides additional detail to this load-balancing between the paths with respect to Figs. 7A-D, 10G and 10I, as also specifically noted in the text to which the Examiner makes reference.

As there is no redundancy requirement according to Wolff, it is believed that regardless of the plurality of possibly intelligently selected paths, there will not be an independent alternate path and the Wolff system will fail to operate in accordance with the requirements for the system.

Claim Rejections Under 35 USC § 103

The rejection of claims 1-3, 5-7, 9, 10, 16 and 22 as being unpatentable over U.S. Patent No. 6,067,545 by Wolff (hereinafter "Wolff") in view of U.S. Patent No. 5,699,510 by Peterson et al. (hereinafter "Peterson") is maintained.

Regarding claims 1 and 9, the Applicants respectfully submit that Wolff merely discloses the ability to remap a communication path. However, this does not lead to a conclusion that

Wolff provides the ability to map a **redundant** communication path. To map such a route, a basic requirement is that a redundant network path that is completely independent from another path be provided. Wolff does not suggest such an independent path. Regardless of how intelligent the re-routing system of Wolff is, without a completely independent communication path the features of the present invention cannot be achieved.

The Examiner agrees that Wolff does not disclose at least one matching resource. However, the Examiner incorrectly contends that the mirroring of Peterson is equivalent to the redundant resource that in combination with Wolff will provide the features of the present invention. This is believed to be unsupported.

A mirrored memory is clearly defined to be something different in Peterson. It is noted in Peterson that "...mirrored memory simply means that data in one memory is duplicated or 'mirrored' in another memory." (column 2, line 65 to column 3, line 1). In other words, data that is on one system is copied exactly onto the other system. Peterson does not provide any suggestion that a mirrored system can provide the capabilities of load-balancing between two identical systems. In fact, providing such a functionality is believed to interfere with the well-known functions of the mirrored systems.

More specifically, the Application overcomes a deficiency in the prior art where a redundant system would idle until it is utilized due to a failure. The present invention provides the capability to have different tasks operating on both matching network resources, balancing the load between the two. In addition, in case of a failure, the tasks are transferred from the failing networked resource to the other resource.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest **all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP 2142 *citing In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

Clearly, the Examiner has not satisfied the “all limitations” prong to establish a *prima facie* case of obviousness.

Further, the Examiner finds alleged motivation to combine references in the need to provide a fault tolerant environment. However, the present invention is believed to go far beyond providing simple fault tolerant systems and provides techniques for using a network resource and its redundant network resource in a load-balanced fashion rather than leaving the redundant resource idling until such time that it is required. Therefore, a skilled artisan would not have been motivated to combine the references. Thus the Examiner has also failed to satisfy the motivation prong to establish a *prima facie* case of obviousness.

In conclusion, Wolff provides the ability of balancing loads between a plurality of networked resources, however, nothing in Wolff addresses the issues of redundant portions of the system that are normally kept idle awaiting a failure in the system. The fact that an alternate

path exists in a networked system does not suggest that there is a redundant path and any broad reading of the Examiner is only in hindsight. The addition of Peterson of a mirror system, does not address the issue of the load of each of the systems comprising the mirror but rather ensures that both have the identical data in any given period of time. Therefore, the combined teaching of Wolff in view of Peterson does not amount to the invention disclosed in the Application. The claims have been amended further to clarify the subject matter.

Based on at least the foregoing reasons, Applicants submit that claim 1 is in condition for allowance over the combination of Wolff and Peterson *et al.*, and further submit that claims 2-7 are allowable as well, at least by virtue of their dependency from claim 1. Applicants respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 1-7.

Further, in relation to claim 7, the Applicants submit that Peterson teaches at most the ability to mirror data between two memories, however, Peterson fails to teach that the two controllers execute different tasks and that upon failure of one of the mirror nodes that tasks from that failing node would be moved to the operational node. The combination of Wolff in view of Peterson does not cure this deficiency as it still leaves the matter as a problem of a mirroring system which is limited in scope and capabilities.

With respect to independent claims 9, 16 and 22, Applicants submit that claims 9, 16 and 22 are in condition for allowance over the combination of Wolff and Peterson *et al.* for at least reasons analogous to those discussed above with respect to claim 1. Applicants also submit that claim 10 is allowable as well, at least by virtue of its dependency from claim 9. Applicants

respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 9, 10, 16 and 22.

Moreover, with respect to claims 10 and 16, the cited references do not suggest assigning a matching redundant network resource, feature of the present invention. This feature allows making use of the normally unused redundant resources of a network system for the purpose of load balancing. Claim 16 has been amended to further clarify the subject matter.

The rejection of claims 4, 8, 11-15, 17-20, 23-26 and 28-38 as being unpatentable over U.S. Patent No. 6,067,545 by Wolff (hereinafter “Wolff”) in view of U.S. Patent No. 5,699,510 by Peterson et al. (hereinafter “Peterson”) and further in view of Richter et al. U.S. Patent Application 2002/0107962 (hereinafter “Richter”) is maintained.

It appears that the Examiner has not considered the arguments provided in the Amendment filed September 20, 2005.

Claim 4 is dependent on claim 1 and is allowable for at least the same reasons. Further, Richter does not overcome the deficiency noted above in the combined teachings of Wolff and Peterson.

The combined teachings on Wolff, Peterson and Richter continue to fail to meet the “all limitations” prong required to establish *prima facie* obviousness.

Further, in relation to claim 4, the Applicants respectfully submit that the present invention relates to a communication element and its contents and not a storage device or control thereof as discussed in Richter and therefore Examiner’s position on this issue remains unclear. Other than the fact that Richter mentions switching capabilities nothing can lead to the assertions

made by the Examiner. Neither can it be shown that a control cache of the Application, that is used for address resolution protocol, is equivalent to a block-level cache processor of Richter. For these reasons, as well as of the claim being a dependent claim of an allowable claim, this rejection should be withdrawn.

Since neither Wolff, Peterson *et al.* nor Richter *et al.* teach or suggest at least the load-balancing and redundant communications medium recited in claims 4 or 8, Applicant submit that one of skill in the art would not be motivated to combine the references. Thus, Applicants submit that the combination of Wolff, Peterson *et al.* and Richter *et al.* fail to meet the motivation prong of a *prima facie* case of obviousness with respect to claims 4 and 8.

Based on at least the foregoing reasons, Applicants submit that claims 4 and 8 are in condition for allowance over the combination of Wolff, Peterson *et al.* and Richter *et al.*, and Applicants respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 4 and 8.

Further in relation to claim 8, the Examiner argues that Wolff discloses load balancing between servers. However, Examiner again fails to show that Wolff is capable of load-balancing between a server and a redundant server that is used for the case were the primary server fails. Such a capability is clearly beyond the capabilities of Wolff. Specifically, attention is drawn to 0087 and 0088 of Richter where it is shown specifically that redundant resources are not used during regular operation and **only switch over in a case of failure**. Clearly there is no suggestion for load sharing even when there is no failure as in the present invention.

With respect to dependent claims 11-15, Applicants submit that claims 11-15 are in condition for allowance over the combination of Wolff, Peterson *et al.* and Richter *et al.* for at least reasons analogous to those discussed above with respect to claims 4 and 8, and due to their dependency from claim 9. Applicants respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 11-15.

With respect to dependent claims 17-20, Applicants submit that claims 17-20 are in condition for allowance over the combination of Wolff, Peterson *et al.* and Richter *et al.* for at least reasons analogous to those discussed above with respect to claims 4 and 8, and due to their dependency from claim 16. Applicants respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 17-20.

With respect to dependent claims 23-26, Applicants submit that claims 23-26 are in condition for allowance over the combination of Wolff, Peterson *et al.* and Richter *et al.* for at least reasons analogous to those discussed above with respect to claims 4 and 8, and due to their dependency from claim 22. Applicants respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 23-26.

In relation to claims 19 and 25, both Richter and Wolff do not consider issues of utilizing the redundant portions of the system. By contrast, the present invention take advantage of resources, that erstwhile remained idle and in standby mode, waiting for another component to fail. By utilizing these available resources, overall performance is increased, and it is possible at all times to ensure that sufficient redundant resource is available to ensure graceful exchange from a failing system to its redundant system.

With respect to independent claim 28, the combination Wolff, Peterson *et al.* and Richter *et al.* fails to teach or suggest at least cache control nodes capable of supporting an address resolution protocol and capable of load balancing storage control nodes, as recited in amended claim 28. Other than the Patent Office's assertion, there is no support that the block-level cache processor of Richter *et al.* supports address resolution protocol and load balancing of storage control nodes, is equivalent to a block-level cache processor of Richter *et al.* Thus, Applicants submit that the combination of Wolff, Peterson *et al.* and Richter *et al.* fail to meet the "all limitations" prong of a *prima facie* case of obviousness with respect to claim 28.

Since neither Wolff, Peterson *et al.* nor Richter *et al.* teach or suggest at least address resolution protocol and load balancing of storage control nodes as recited in claim 28, Applicant submit that one of skill in the art would not be motivated to combine the references. Thus, Applicants submit that the combination of Wolff, Peterson *et al.* and Richter *et al.* fail to meet the motivation prong of a *prima facie* case of obviousness with respect to claim 28.

Based on at least the foregoing reasons, Applicants submit that claim 28 is in condition for allowance over the combination of Wolff, Peterson *et al.* and Richter *et al.*, and further submit that claims 29-38 are allowable as well, at least by virtue of their dependency from claim 28. Applicants respectfully request that the Patent Office reconsider and withdraw the § 103(a) rejection of claims 28-38.

Further, in relation to claims 28 and 29, the Examiner is believed to be incorrect on several grounds. Notably, Wolff does not make any reference for independent redundant resources capable of execution of tasks. Even the introduction of a mirror system does not

provide this capability as only data is copied between the two mirrors as is specifically noted by Peterson. The Examiner appears to be considering the mirror units to be cache control nodes. But even if such a consideration can be made, the system is believed to be inoperable.

The rejection of claims 21 and 27 as being unpatentable over U.S. Patent No. 6,067,545 by Wolff (hereinafter "Wolff") in view of Richter et al. U.S. Patent Application 2002/0107962 (hereinafter "Richter") has been maintained.

Certain clarifying amendments are provided. As noted above, Wolff does not suggest any use of the redundant portions of a system solution. According to Wolff, there are elements that are operative at all times, with no suggested redundancy or how to handle such elements. Wolff is believed to be no different from conventional systems, where redundant systems generally were left idle to go into operation upon failure of the system they provided backup for. In the present invention, the redundant systems are used for the purpose of load-balancing. Handling such a system require the features to the present invention.

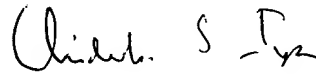
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Patent Application No.: 09/989,377

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